Project Title: Travel Time Estimation Using Bluetooth

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Project Summary

Travel time estimates are useful measures of congestion in an urban area. Current practice involves using probe vehicles or video cameras to measure travel time but this is a labor intensive and expensive means of obtaining the information. A potentially more efficient and less expensive way of measuring travel time is to use Bluetooth technology to track vehicle movement in a network.

The kind of information we are looking to obtain from the measurement of travel time is:

1. overall congestion in an urban area
2. the trend in overall congestion in an urban area
3. individual locations where congestion is high (i.e. identification of so-called "hotspots")
4. the level of congestion at the hotspots
5. the difference in congestion following introduction of a policy change in an urban area.

When conducting research into the use of Bluetooth technology to obtain travel time observations, it is necessary to consider whether there are other means of obtaining the information quicker and cheaper. Some possibilities are time-related travel speeds on major networks from sources such as Google's traffic maps and information on overall congestion in major U.S. cities published in Texas Transportation Institute's annual Urban Mobility Report (http://mobility.tamu.edu/ums). From our initial assessment, we believe that the type of travel time information sought in items 1 and 2 above can be effectively answered using TTI's annual Urban Mobility Report and consecutive annual Urban Mobility Reports, respectively. Item 3 (i.e. identification of the location of individual "hotspots") can possibly be identified using Google's traffic map information. However, part of the research will be to verify the initial assessment that using secondary data sources is quicker and cheaper than Bluetooth technology when identifying overall congestion, the trend in congestion, and individual hotspots.